

HOFFMANN & WENDLER'S

PATENT DISINFECTANT COMPOSITION

AND

MANURE PRESERVER.

A Perfect Preventive of Putrefaction and Decay,  
AND THE MOST POWERFUL PURIFIER OF ALL LOCALITIES INFECTED WITH  
OFFENSIVE GASES AND MALIGNANT AND CONTAGIOUS MATTERS.

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*Manufacturing Chemists,*  
63 PEARL STREET, NEW YORK.

[P. O. box 1358.]

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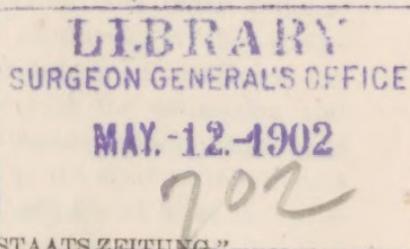
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AMONG the numerous questions on the normal condition and the chemical purity of the atmosphere, and on the kind and nature of such matters which in immense variety and masses are taken up and transmitted by the air, none is of a more important and at times of a more peremptory sanitary interest, than that, to which of such substances we can or may attribute the temporary appearance of malignant local and epidemic diseases. It is a long established fact that there are epidemic or travelling causes to all appearance reproducing themselves as they advance, as is the case in plagues like malaria, typhus, yellow fever and cholera. Such are generally believed to be infectious gases, miasms and contagions, but their nature is still problematic in so much as science as yet has not succeeded in isolating or fully elucidating any of such infectious matters. Just as their causes, so are the zymotic diseases themselves but little understood ; they fill almost in every age of the history of the human race a long series of the greatest miseries, they have befallen the largest communities, such as nations; and the smallest, such as families; have made their appearance especially in the gloomiest days of misfortune and grievance and have frequently followed the track of great, and especially of defeated armies and taken refuge in great, crowded and demoralized cities.

As regards the gaseous admixtures and organic impurities temporarily and accidentally contained in the atmosphere, we still labor under the disadvantage of insufficient experimental data. The great difficulty in the estimation and knowledge of these substances lies in the very small quantities of those which are gases, and still more in the absolute minuteness of those which are solid matters. There are at least two principal modes by which the air is rendered impure : 1st, by offensive and noxious gases, dust and ashes, produced by geological,

contagious and miasmatic matters, are likewise such as check all processes of fermentation, putrefaction and decay; that under the influence of disinfecting matter, such as permanganatic, hydro chloric and some other acids, chlorine, etc., which powerfully oppose putrid decomposition, the diseased action in malignant wounds is entirely changed; that in a number of contagious diseases the formation of infectant gases and still more infectant contagions or miasms is certain—it seems impossible any longer to entertain a doubt as to the origin and propagation of most of the zymotic diseases. All these data are in accordance with the numerous observations and established statements that those malignant diseases are found epidemic, wherever decomposition of organic substances constantly and extensively goes on and that they, when reaching on their track great cities or demoralized communities, they generally take halt, rage most and linger longest where the inhabitants are most thickly crowded in infected premises with imperfect ventilation, and living on and surrounded by filth, impurities of all kind, rotten clothes, putrid sinks, cesspools, slaughter houses and all those dreadful breeding places and powerful supporters of infectious diseases.

Inasmuch as cholera has attracted since years the attention of physicians and men of science as well as of governments and philanthropists, there are of course a vast number of observations and data in every point of view; they partly agree or are in some points contradictory, but as regards the statements just made, they, without exception, coincide that the origin, the propagation and duration of cholera epidemics may closely be related to such causes and promoters. As regards cholera, we are for the best observations and elucidations indebted to Prof. Pettenkofer in Munich and Dr. Delbrück in Halle, Prussia. Their statements are confirmed by many and prominent men, both of the medical and chemical profession. During the four great epidemics in 1832, 1849, 1850 and 1855, Dr. Delbrück proved the local appearance and spreading of the cholera, and still more, that those localities, blocks and houses, in which it had its greatest ravages and most fearful mortality, were either standing upon or in communication with putrid deposits and dumping grounds, or were exposed to the emanations of foul sinks, cesspools, sewers or si-

milar sources of pestilence. Among the numerous examples related by Dr. Delbrück, only one may be mentioned here. During the epidemic in the summer of 1855, in the three wings of the state prison at Halle, Prussia, resp. 23, 25 and 36 percent of the occupants were attacked with the cholera. The remarkable high rate of the third wing was proved to be caused by its close connection with the sink, into which flowed the evacuations of all the sick. The other wings of the building were also connected each with a sink, but these remained free from the excretions of the sick, and, beside this, they were better drained. Whilst of the more than one thousand prisoners about one third fell sick, not a single person of the more than forty families of the officers of the institute were attacked by the cholera; the apartments occupied by them being out of all close communication with the privies and sinks of the prisoners. The influence of the latter became still more evident, when they were carted in order to remove and to replace them by sewers. When this was done, the scourge had long been in decline; the discharge of the sinks of the first two wings passed without any apparent reaction upon the sanitary state of the institute, but when the third sink, wherein the evacuations of the sufferers had been accumulated, was discharged, the epidemic immediately sprang up anew and reached its greatest virulence. Of those persons who were engaged in the discharge, only one was attacked with cholera—an evidence that persons, slightly exposed to the most infected air, but with a temperate exercise and labor, are far less subjected to infection than persons living in such deleterious premises.

This example shows merely on a small scale what takes place on a great scale in cities and communities.

All the statements and data brought here briefly into prominence, sufficiently evince that, whatever difference of opinion may exist in regard to the proximate causes and the nature of those infectious and contagious diseases, their propagation by infectious matter, whatever name we may give them, and that these scourges generally decline and disappear as soon as those causes are removed, is beyond doubt.

In view of the anticipated approach of an epidemic of cholera, it may be pertinent to direct the public attention once more

to these statements; they certainly deserve the earnest consideration of the administrations of our communities and of every one interested in the public welfare. It is an acknowledged fact, well known and repeatedly and truthfully represented in some of the most respected papers, that our large cities, and foremost among them *New York*, which is in sanitary respects so happily located, have accumulated by imprudence and unprincipled usages within their areas an immense amount of feculence and refuses. Their grounds are saturated with concentrated putrid liquids. The assertion of public officers may indeed be true, that probably at no age and in no country has been a city of such an extent and prominence as New York which so continually and thoroughly has been infected with filth, feculence, offal and refuses. The wretched state of whole parts of our metropolis, the demoralization and vicious degradation of their inhabitants, always closely connected with physical decay and uncleanness, are notorious.

Therefore we meet everywhere the urgent call that adequate measures should be provided in order to prevent such a contingency. Action in time can insure and place our large communities in a condition to stay the ravages of cholera, at least to prevent a large amount of suffering and go a great way to arrest the calamities of this scourge.

The want of proper and thorough cleansing of our great cities, as it is done in Europe—and mostly in an exemplary manner—becomes more and more peremptory. It is, however, a gigantic task, after the lapse of so many years and with the accumulation of such an immense amount of dirt, offal and nuisance, to elevate cities like New York to a state of desirable cleanliness. In order to accomplish this, it affords toil and time of thousands, an adequate vigorous administration of our local affairs and honest and competent men in all places and situations.

Just as well as in Europe, China and Japan, the valuable sewage and all the excretas and refuses of large communities are made by proper collection, removing and utilization, a source of revenue, which not only pays their removing and working, but a considerable surplus; so could and ought it to be in this country: for the excreta of cities, the contents of their sinks, sewers and putrid reservoirs are and contain the best and most valuable

manure, so much needed by our fields. Indeed, they are, now a days, a part of the national capital, which all our cities, with a regardlessness inconsistent with modern science and economy, throw either into the rivers and the sea, or leave to decay and putrify and, thereby, to breed pestilence in our midst. *The United States import Guano for high prices from distant islands in order to fertilize their exhausted fields, and yet, we allow the immense capital withdrawn since long years by the crops from our fields and deposited in sinks and other reservoirs, to putrify and decay, instead of simply returning it to the fields and gardens.* And, still more, we add to the domestic capital the new one bought from abroad, also to putrify or to flow into the rivers. Such practice is, indeed, the extreme degree of the exhausting system (Raubwirthschaft), exposed by Prof. Liebig and modern science, and *by which ignorance, nations, in the lapse of centuries, have ruined their lands and the fundamental conditions of their own race.* \*) China and Japan, Germany, Switzerland and France have given, and still give, ample evidence how to save this national stock, circulating between the vegetable world and the animal existence, and even, how to export agricultural products without losing thereby home capital past recovery.

The principal aim in cleansing our cities must, therefore, be the establishment of an adequate and permanent healthy condition and of the utilization of their excreta and refuses. As the ultimate accomplishment of this work in our large cities probably will take years, it must now be our main object, in order to obviate the formation of and the infection with contagious and deleterious miasms, to prevent or to check the putrid decomposition of filth and mire throughout our cities, especially, when the summer sets in.

As in our cities refuse matters, mire and filth are allowed to lie, either exposed, or in underground receptacles which cannot at

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\*) Liebig in his "Letters on theoretical and practical agriculture" says : The sewers of the huge metropolis of the ancient world absorbed during centuries the wealth of the fields of Italy, and when they were exhausted and could not any more supply the wants of the great Roma, all the prosperity of the fertile seabord countries around the Mediterranean was devoured by its cloacas.

once be removed, immense masses of putrid and foul matter everywhere emanate offensive and infectious exhalations, thorough disinfectants are the only means to prevent the danger of infection of our communities, or, where it too late, greatly to diminish the scourge, if not entirely to check it. [There are, besides, especial cases without end continually occurring, where impurities, excrements, garbage and offal of markets, slaughter houses, stables, factories, hospitals, etc., cannot at once be removed, and where treatment with disinfectants is required. This we must afford with the cheapest and best adapted means and in a practical and most thorough method.

That the processes of fermentation and putrefaction and, therewith, the generation of infectious matters are greatly and essentially promulgated under the influence of heat and humidity, is generally understood, as well as that cold, proper disinfection of the air charged with the noxious or infectious matters, bring on a standstill and generally the end of epidemics. Such substances, which have the property chemically to change all deleterious matters, and, thereby, to make them innoxious, are well known to chemists: the most effective of them are sulphureous, nitric and hydrochloric acids, chlorine and its oxyacids, manganic and permanganic acid, some metallic salts as the sulphates of iron and copper, coal, creosote. Each of them, properly applied, give satisfaction in cases where they are pertinent.

But there is one point sometimes not correctly understood; the word *Disinfectant* has lately become somewhat uncertain in its meaning, on account of a word used as its equivalent, viz., *Deodorizer*. There is, however, a decided distinction between them. Disinfectants which only remove gases which smell, and allow all or some of the infectant and deleterious miasms or contagions having no smell to pass, we may properly term deodorizers. Thus, for instance, it is well known that metallic salts, as protosulphate of iron, remove ammoniac and sulphuretted hydrogen, freely disengaged in privies, sinks and sewers, and which generally accompany the formation of infectious miasms. Sulphate of iron certainly will absorb these offensive gases and will stop putrefaction in proportion to the removal of those gases, so that it may be a thorough deodorizer; but it is quite certain

that it cannot afford a complete disinfection, because it cannot destroy miasmatic and contagious matters. To prevent the formation of one or more offensive gases is certainly not to arrest the processes of putrefaction and the generation of infectious miasms. So far as known, the most deleterious of emanations have no smell at all to the senses, and we can only judge of the evil by their results, or the fact that the substances, capable of producing them, are near. Sulphuretted hydrogen is mostly an indication of the presence of other miasmatic substances, but it is by no means a proof of their presence, nor is its absence a proof of the absence of infectious matters, it being only an occasional accompaniment. Therefore, when infectious matter and odoriferous matter are one, then to deodorize is to disinfect. But when, as for instance, in the case with chlorine (chloride of lime), we decompose one smell by superadding a greater, in both cases we may perfectly deodorize, but with this difference that in the first case we let loose all those matters which alone may be infectious, while in the second case we may partly and occasionally destroy them, but certainly without any satisfactory reliance, and by sending into the air a substance by no means wholesome; in both cases the putrid decomposition too may be stopped, at least for a while, but never lasting. Both, deodorizer and disinfectant, are used up in their very action, when neutralized they are chemically changed and have not any longer their characteristic properties.

In all processes, where by putrefaction, fermentation and decay offensive gases and infectious matters are generated, the smelling stages are by no means the dangerous ones, and *deodorizers, which only remove the offensive odor and possibly interrupt the processes of decay for the moment, but allow them to begin again, cannot, in a sanitary relation, have any permanent and reliable value.* Such substances are well known and are mentioned on page 10. But a substance, or a chemical compound, which not only removes noxious emanations and arrests putrefaction, but still more which completely and permanently prevents putrid decomposition, and, therewith, the generation of offensive and infectious exhalations, has as yet been a desideratum.

The undersigned have at last succeeded in the composition of a chemical preparation which *perfectly hinders and prevents any putrefaction whatever*, and which more promptly and thoroughly than any other disinfectant decomposes and removes the

putrid or infected condition of organic substances at any time, locality and however far the processes of decay and the deleterious infection may have advanced and spread. It is the only method to prevent and permanently to check putrid and infectious decomposition of organic matters; as a disinfectant its powerful and prompt efficiency is second to none. Its use is simple, its application easily and everywhere practicable, and it is comparatively the cheapest of all. *It gives off no offensive smell and may safely and permanently be used in all our houses and premises—even in our bedrooms.*

In all cases where we have tried our DISINFECTANT COMPOSITION *it has perfectly answered all exigencies of comfort and sanitary requirements on a large scale as well as for private use. The recipients of excrements, feculence and offals remain permanently and completely odourless, their contents inoffensive and undecomposed. As a manure, their fertilizing properties are not only preserved but greatly improved, and they can be removed without any offensive smell at any length of time.* So it is with all business detrimental to the general health or comfort, with stables, slaughter houses and all places where excrements, feculence, refuse matters and offal are accumulated or deposited. Putrid privies and sinks, sewers and cesspools, foul cellars and all premises and abodes with insufficient ventilation or infected by malignant and contagious diseases, or by filth, vice and wretchedness are thoroughly and lastingly disinfected.

Thus, by the way not only of science but also of experience and facts, we are fully convinced that our method under all circumstances to afford perfect disinfection, to prevent, as well as to check putrid and infectious decomposition and to save our fields their best fertilizer, now introduced into the market, will make its way for the benefit of the public comfort and health, and will continue to be a safeguard to our communities, and, besides, an expedient to improve the sanitary condition of the dwelling places of our poor and destitute, and, thereby, to promote the physical welfare of the commonwealth.

DR. FREDERICK HOFFMANN, }  
ROBERT WENDLER.      } chemists.

NEW-YORK, March 1866.











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